

REMARKS

Reconsideration of the above-identified application in view of the amendments above and the remarks following is respectfully requested.

Claims 1-21 are in this case. Claims 1-20 have been rejected under § 103(a). Claim 15 is subject to a non-statutory double-patenting rejection. Claim 21 has been objected to. Independent claims 1, 14 and 19 and dependent claim 4 have been amended. Claim 3 has been canceled. New dependent claims 22-25 have been added.

§ 103 Rejections - Claims 1-7

The Examiner has rejected claims 1 and 2 under § 103(a) as being unpatentable over Ebert et al. (US 5931874) in view of Alpers (US 4288049). The Examiner has further rejected claims 3-5 under § 103(a) as being unpatentable over Ebert et al. in view of Alpers and Maguire, Jr. (US 6359601). The Examiner has also rejected claims 6 and 7 under § 103(a) as being unpatentable over Ebert et al. in view of Alpers and further in view of Maguire, Jr. and Takeyama, or Takeyama (US 5647016). The Examiner's rejections are respectfully traversed.

Ebert et al. relates to an electrical interface, and corresponding user interface, for controlling weapon systems. The system is illustrated for implementations both of hard-wired missiles such as a "Maverick" missile (Figure 2B) and missiles with remote video control such as a "SLAM" missile (Figure 2A). In each case, command controls pass through the hard-wired aircraft electronics systems in a conventional manner either directly to the missile or to a wing-based data-link pod. No component of any wireless communication link are located within the cockpit of the aircraft.

Alpers discloses a remotely guided missile. Maguire, Jr. discloses an eye-tracking system. Takeyama discloses an audio interface for giving crew members

directional audio cues. None of these secondary references provides for control of a weapon system via a wireless communications link.

In contrast, the device of the present invention as defined by these claims provides a solution for controlling a weapon system by a user in the cockpit of an aircraft without requiring full integration of the weapon system and cuing system with the aircraft electronics systems. This is achieved by using a wireless communication link between the cuing system and the weapon system controller wherein a first portion of the wireless communication link is located within the cockpit.

While continuing to traverse the Examiner's rejections, the Applicant has, in order to expedite the prosecution, chosen to amend independent claim 1 in order to clarify and emphasize the crucial distinctions between the device of the present invention and the device of the patents cited by the Examiner. Specifically, claim 1 has been amended to include the limitations of now canceled dependent claim 3, and further to clarify that the first portion of the wireless communication link is located within the cockpit. This feature is neither taught nor in any way suggested by any of the references of record, whether considered individually or in combination.

Dependent claim 4 has been amended to adjust its dependency in view of the above amendments. New dependent claim 22 further recites that said first portion of the wireless communication link includes a transmitter supported by the body of the user. New dependent claim 23 further recites that said first portion of the wireless communication link includes a transmitter mounted at a fixed position within the cockpit.

Support for these amendments can be found in the specification. Specifically, support for the portion of the communication link located within the cockpit, and the

specific examples of claims 22 and 23 can be found in Figures 2, 3 and 6 and in the accompanying description.

Amended independent claim 1 now features language which makes it absolutely clear that the claimed device provides a weapon control system in which a weapon system is controlled via a wireless communication link part of which is located within the cockpit of the aircraft. The Applicant believes that the amendment of the claims completely overcomes the Examiner's rejection of these claims on § 103(a) grounds.

§ 103 Rejections - Claims 8-13

The Examiner has rejected claims 8-10 under § 103(a) as being unpatentable over Maguire, Jr. in view of Takeyama. The Examiner has also rejected claims 11-13 under § 103(a) as being unpatentable over Maguire, Jr. in view of Takeyama and either Hergesheimer or Hamilton et al. The Examiner's rejections are respectfully traversed.

Maguire, Jr. discloses a method and apparatus for eye tracking, particularly for controlling an image. Takeyama discloses an audio interface for giving crew members directional audio cues as a function of their head position. The Examiner has suggested modifying Maguire, Jr. according to the teachings of Takeyama and suggests that this would result in the invention of claim 8 as claimed.

The MPEP in Section 706.02(j) sets out the criteria for 35 USC § 103(a). Specifically, the MPEP states:

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success.

Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure.

With regard to the requirement of "Suggestion or Motivation To Modify the References", section 2143.01 of the MPEP states as follows: If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

In response to the Examiner's rejection, the Applicant respectfully wishes to point out that the combination suggested by the Examiner clearly fails to teach all of the claimed limitations or, alternatively, would be unsatisfactory for its intended purpose.

Specifically, it is vital to note that the human ears do not swivel or otherwise follow motion of the human eyes but rather remain in almost all circumstances firmly attached in fixed relation to the human head. As a result, the teachings of Takeyama relating to binaural directional audio cues are clearly and unambiguously limited to implementation as a function of head position, uncorrelated to variations in gaze direction relative to the head. Thus, the combination of Maguire, Jr. with Takeyama would fail to provide the method recited in claim 8 of record wherein an audio output provides the user with information relating to an element visible to the user along a measured eye gaze vector.

Alternatively, if an attempt were made to implement the system of Takeyama in the context of Maguire, Jr. by providing binaural audio cues as a function of eye gaze direction, the Applicant respectfully submits that the result would be completely disorientating to the user, rendering the system unsatisfactory for its intended purpose.

In view of these arguments, the Applicant respectfully submits that independent claim 8, and hence also claims 9-13 which depend therefrom, is allowable in its current form. Withdrawal of the § 103(a) rejections of these claims is respectfully solicited.

§ 103 Rejections - Claims 14-20

The Examiner has rejected claims 14, 19 and 20 under § 103(a) as being unpatentable over Maguire, Jr. in view of Takeyama. The Examiner has also rejected claims 15-18 under § 103(a) as being unpatentable over Maguire, Jr. in view of Takeyama and one of Hergesheimer, Hamilton et al. and Kinder. The Examiner's rejections are respectfully traversed.

As already detailed above, the Applicant respectfully submits that the combination of Maguire, Jr. with Takeyama is essentially flawed as a basis for a § 103(a) rejection.

In addition, the Applicant respectfully wishes to point out that the system disclosed by Takeyama is intended to provide directional cuing to help crew members turn their heads in the correct direction to view a detected target. It follows that the audio input for any given target must be generated particularly when the user is facing a direction angled considerably away from the target direction. As a result, the system is limited in its applications, and would flood the user with excess audio information if operated with multiple reference directions.

In contrast, the device of the present invention as defined by these claims provides a system which generates audio output indicative of information related to a reference direction only when the current cuing direction is substantially equal to the reference direction. As a result, the user chooses by controlling the cuing system what information he or she wishes to be provided. As a result, the system can provide

information about numerous objects or features in the user's field of view without any risk of audio information overload

While continuing to traverse the Examiner's rejections, the Applicant has, in order to expedite the prosecution, chosen to amend independent claim 14 and 19 in order to clarify and emphasize the crucial distinctions between the device of the present invention and the device of the Takeyama patent cited by the Examiner. Specifically, claims 14 and 19 have been amended to further to clarify that the audio output indicative of information related to a reference direction is generated only when the current cuing direction is substantially equal to the reference direction. This feature is neither taught nor in any way suggested by any of the references of record, whether considered individually or in combination.

New dependent claims 24 and 25, depending from claims 14 and 19, respectively, recite that the given degree of accuracy (or predefined margin of error) is defined by a maximum allowed discrepancy having a value less than 5°.

Parenthetically, it will be clearly understood, and is evident from the description, that the present invention as claimed herein does not preclude provision of other audio information not related to any specific reference direction (such as the first audible signal that a missile is currently tracking a target - step 66 in Figure 4) which is typically provided continuously, independent of the current cuing direction.

Support for the amendments to claims 14 and 19 can be found throughout the specification. Support for a maximum allowed discrepancy having a value less than 5° may be found on page 21 lines 8-10.

Amended independent claims 14 and 19 now features language which makes it absolutely clear that present invention provides an information system and method responsive to a cuing system to provide audio output indicative of information

associated with a reference direction only when the current cuing direction is substantially equal to the reference direction. The Applicant believes that the amendment of the claims completely overcomes the Examiner's rejections on § 103(a) grounds.

Double Patenting Rejection

The Examiner has rejected claim 15 under the judicially created doctrine of obviousness-type double patenting over the parent application US Patent No 6,667,694.

In response, the Applicant respectfully points out that the present application is a continuation of the aforementioned patent filed subsequent to June 8, 1995. As clearly stated in MPEP 2701:

A patent granted on a continuation, divisional, or continuation-in-part application that was filed on or after June 8, 1995, will have a term which ends twenty years from the filing date of earliest application for which a benefit is claimed under 35 U.S.C. 120, 121, or 365(c), regardless of whether the application for which a benefit is claimed under 35 U.S.C. 120, 121, or 365(c) was filed prior to June 8, 1995.

As such, this application is already subject to the same term limitations as the parent application and no "unjustified or improper timewise extension of the 'right to exclude' ..." can occur. As a result, the Applicant respectfully submits that filing of a terminal disclaimer in this case would have no effect on the patent term and is therefore superfluous. Withdrawal of the non-statutory double patenting rejection is respectfully solicited.


Objections

The Examiner has objected to claim 21 as being based on a rejected base claim. The Examiner has noted that this claim would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claim.

In view of the discussion above in the context of the § 103(a) rejections, the Applicant submits that the base claim from which this claim depends is allowable, making claim 21 allowable in its present form.

In view of the above amendments and remarks it is respectfully submitted that independent claims 1, 8, 14 and 19, and hence also dependent claims 2, 4-7, 9-13, 15-18 and 20-25, are in condition for allowance. Prompt notice of allowance is respectfully and earnestly solicited.

Respectfully submitted,



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